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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,086	10/28/2003	Van S. Chandler	215063.01506	1156
35617	7590	07/21/2005	EXAMINER	
DAFFER MCDANEIL LLP			BARBEE, MANUEL L	
P.O. BOX 684908			ART UNIT	
AUSTIN, TX 78768			PAPER NUMBER	

2857

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/694,086

Applicant(s)

CHANDLER, VAN S.

Examiner

Manuel L. Barbee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 3-9, 11, 15-18 and 20-24 are rejected under 35 U.S.C. 102(b) as being anticipated by van den Engh et al. (US Patent No. 5,150,313).

With regard to a flow analyzer configured to collect data for events in successive sampling periods with substantially zero dead time between sampling periods, as shown in claims 3, 5, 7 and 24, Engh et al. teach a flow cytometer that samples data with virtually no dead time (col. 4, line 9 - col. 5, line 11; col. 5, line 45 - col. 6, line 2; col. 8, lines 4-50; Fig. 5A). With regard to at least one buffer having a plurality of data areas and adapted to receive the data from the flow analyzer and store the data for each successive sampling period in different data storage areas with substantially zero dead time and where the buffer has an addressable range of the plurality of data storage areas to go sufficiently backward in the successive sampling periods, as shown in claims 3, 5, 7 and 24, Engh et al. teach a first in first out (FIFO) storage buffer used to store the samples with virtually no dead time (col. 4, line 9 - col. 5, line 11; col. , lines 4-50; Fig. 5, FIFO 24abc). With regard to at least on processor connected to the buffer to process the data from the storage areas of the buffer, as shown in claims 3, 5, 7 and 24, Engh et al. teach a computer that connected to a bus that connects to the FIFO storage

buffers and processes the stored data (col. 8, lines 4-50; Fig. 5, computer 32; col. 15, lines 5-37).

With regard to a flow cytometer, as shown in claims 4 and 6, Engh et al. teach a flow cytometer (Abstract). With regard to processing the data in the different data storage areas at a rate that is different than a rate at which the data is stored in the different storage areas, as shown in claim 8, Engh et al. teach a computer that processes the data from the FIFO storage buffer independently of the data acquisition process (col. 15, lines 5-37). With regard to processing the data in the storage areas after the data has been stored in the different storage areas for a time longer than a longest possible time for an event, as shown in claim 9, Engh et al. teach waiting till all samples for an event in a bus have been transferred before processing the samples (col. 15, lines 5-22). With regard to storing a predetermined amount of data backward in time, as shown in claim 11, Engh et al. teach storing data for an entire event before processing the data (col. 15, lines 5-22).

With regard to parameters that are user specified, as shown in claim 15, Engh et al. teach the option to use more than one computer and adapt the computer interface to work with any computer (col. 15, lines 23-37). With regard to storing data from successive sampling periods in the storage areas in the order in which the data storage areas are linked, as shown in claim 16, Engh et al. teach a FIFO storage buffer (col. 8, lines 4-49). With regard to a pointer to direct the storage of data in the addressable buffer and a pointer to direct the processing of the data by the processor, as shown in claims 17 and 20, Engh et al. teach a FIFO storage buffer that is addressed sequentially

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(col. 8, lines 4-49). With regard to an additional processor configured to direct the storage of data in the addressable buffer, as shown in claim 18, Engh et al. teach a central timing unit and a bus controller (col. 8, lines 15-49).

With regard to an additional processor configured to process the data in the different storage areas, Engh et al. teach additional processors used for processing the data (col. 15, lines 23-37). With regard to processing data as being part of one event, as shown in claim 22, Engh et al. teach processing data for one event (col. 15, lines 5-37). With regard to data from a plurality of channels, Engh et al. teach processing data from three signal sources (Fig. 5A).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over van den Engh et al. in view of Harman (US Patent No. 4,091,367).

Engh et al. teach all the limitations of claim 7 upon which claim 10 depends. Engh et al. do not teach processing data at a rate that is determined based on a signal-to-noise ratio of the data in the storage areas, as shown in claim 10. Harman teaches a variable signal to noise ratio threshold used to determine whether to process signals received by a detector (col. 7, lines 50-59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flow cytometer,

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as taught by Engh et al., to include using a the signal to noise ratio to determine whether to process signals, as taught by Harman, because then false alarms would have been avoided (Harman, col. 7, lines 50-59).

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over van den Engh et al. in view of Sizto et al. (US Patent No. 5,556,764).

Engh et al. teach all the limitations of claim 7 upon which claim 12 depends. Engh et al. do not teach a circular buffer. Sizto et al. teach a circular buffer in a flow cytometer (col. 9, lines 34-49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flow cytometer, as taught by Engh et al., to include a circular buffer, as taught by Sizto et al., because then another option for sequentially storing data would have been available.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over van den Engh et al. in view of Burton et al. (US Patent No. 5,250,856).

Engh et al. teach all the limitations of claim 7 upon which claim 13 depends. Engh et al. do not teach a cascading buffer, as shown in claim 13. Burton et al. teach cascading buffers (col. 7, lines 34-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flow cytometer, as taught by Engh et al., to include a cascading buffer, as taught by Burton et al, because then an extremely fast delay line would have been available (Burton et al., col. 7, lines 34-45).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over van den Engh et al. in view of Lautzenheiser (US Patent No. 5,325,509).

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Engh et al. teach all the limitations of claim 7 upon which claim 14 depends. Further, with regard to a FIFO buffer, as shown in claim 14, Engh et al. teach a FIFO storage buffer, as shown above with regard to claim 7. Engh et al. do not teach a backward cache. Lautzenheiser teaches a backward cache feature (col. 20, lines 39-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flow cytometer, as taught by Engh et al., to include a backward cache feature, as taught by Lautzenheiser, because then data would have been accessible in either direction in the sequential buffer (Lautzenheiser, col. 20, lines 39-50).

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over van den Engh et al. in view of Greenbaum et al. (US Patent No 6,285,377).

Engh et al. teach all the limitations of claim 7 upon which claim 19 depends. Engh et al. do not teach a field programmable gate array (FPGA), as shown in claim 19. Greenbaum et al. teach a FPGA (col. 15, lines 32-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flow cytometer, as taught by Engh et al., to include a FPGA, as taught by Greenbaum et al., because then control functions would have been available with a smaller board size (Greenbaum et al., col. 15, lines 32-41).

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 3-6 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kay et al. (US Patent No. 4,293,221) teach a flow cytometer with a storage queue for sampled data.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

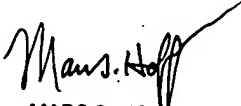
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manuel L. Barbee whose telephone number is 571-272-2212. The examiner can normally be reached on Monday-Friday from 8-4:30.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mlb  
July 12, 2005

  
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